

Release Notes

Schroff firmware part number 63998-08152

Based on Pigeon Point Systems (PPS) firmware release 2.5.3 for ShMM-500

Release Date: July 28, 2008

Release History:

Release date	Schroff FW P/N	PPS version
December 14, 2006	63998-04657	V2.3.2
April 26, 2007	63998-04660	V2.4.2
January 18, 2008	63998-04662	V2.5.1
July 28, 2008	63998-08152	V2.5.3

Introduction:

The firmware package “63998-08152.zip” contains Firmware release 2.5.3 for the **ShMM-500**. The PPS RFS image has been modified by Schroff to adapt the firmware to the Schroff ATCA chassis. The kernel image has not been modified and is identical to the PPS kernel image. The U-boot environment has been modified to reflect the necessary non-volatile system settings for this firmware running on Schroff shelf managers. The Schroff part number for this firmware release is 63998-08152.

Important Notice:



Prior to V2.5.3 the hardware behavior of the shelf manager and the chassis were hard coded into the shelf manager firmware. Starting with Version 2.5.3, the Schroff shelf manager firmware is based on Pigeon Point Systems HPDL (Hardware Platform Description Language). See Pigeon Point Systems document “ShelfManagerUG_2_5_3_20080430.pdf”. HPDL records are stored in the shelf manager’s FRU data and the Chassis’ FRU data. The HPDL contains the structure, device population, definitions of the chassis hardware and behavior of the Schroff ATCA chassis. Therefore, as part of the upgrade process of the firmware, the FRU files of the shelf manager and the chassis must be upgraded at the same time. This requires a complete reboot of both shelf manager(s) **at the same time or a power cycle of the chassis**.

The correct assignment of the FRU files to the respecting chassis part number is given in the table ‘FRU ID Files’ below. The FRU files are shipped with this release and are stored on the ShMM-500 in the /var/nvdata directory.







Note: It is possible to continue to run existing shelf managers and chassis in non-HPDL mode with V2.5.3 firmware. Because new shelf manager and chassis designs will only be supported in HPDL mode we recommend that existing shelf managers and chassis be upgraded to HPDL mode.

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1 Schroff shelf manager versions

The table below shows the Schroff shelf manager versions, please identify your shelf manager type. You will need the corresponding RC2-variable later in the upgrade process.

Photo	Type	RC2-variable
 <p>The part number of the ACB-V shelf manager is on the label at the rear side of the shelf manager, see photo below:</p> <ul style="list-style-type: none"> - Radial IPMB version: p/n = 21596-292 - Bused IPMB version: p/n = 21596-291 	ACB-V	rc.acb-HPDL
 <p>Note: If you have this shelf manager in your Zephyr or Ventus chassis please follow the special upgrade instructions.</p> <p>The part number of the ACB-IV shelf manager is on the label at the rear side of the shelf manager, see photo below:</p> <ul style="list-style-type: none"> - Radial IPMB version: p/n = 21594-347 - Bused IPMB version: p/n = 21594-346 	ACB-IV	rc.acb-HPDL
 <p>The part number of the ACB-III shelf manager is on the label at the rear side of the shelf manager, see photo below:</p> <ul style="list-style-type: none"> - Radial IPMB version: p/n = 21593-251 - Bused IPMB version: p/n = 21593-250 	ACB-III	rc.acb3

The following Shelf Manager types originally shipped with ShMM-300 modules but might have been upgraded to ShMM-500 modules by the customer

For upgrade instructions, please contact your Schroff service partner.

	ACB-III	rc.acb3e
	ACB-II	rc.acb2
	SMC-1	rc.acb-es

2 Preparations

Firmware files

Unzip the file sentry.63998-08152.zip. This file contains the following Pre-Built images:

TFTP Upgrade files:

63998-08152.kernel

Upgrade kernel image for TFTP upgrade

63998-08152.rfs

Upgrade RFS image for TFTP upgrade

Reliable Upgrade files:

63998-08152.shmm500.kernel Upgrade kernel for reliable upgrade

63998-08152.shmm500.rfs

Upgrade RFS for reliable upgrade

63998-08152.u-boot.bin

Upgrade u-boot for reliable upgrade

Terminal Program

Connect a serial console cable to a terminal or PC running a terminal emulator (Hypercom, Minicom, Hyperterminal etc) to the serial interface of the Shelf Manager (RJ45 connector "SERIAL" or "ShMgr" on the SAP). Set the terminal or emulator to 115200, N, 8, 1 (115200 baud, no parity, 8 bits per character, 1 stop bit).

Login user is "root" with no password.

FRU ID files

The Shelf Manager firmware images also contain FRU ID files for the Shelf, Fan Trays, PEMs, SAP and the Shelf Manager.



Important Note: This firmware release also contains updated chassis FRU data files. These FRU data files are stored in the /var/nvdata directory of the ShMM-500. The installation procedure of the FRU data files is described below. Please make sure to install these FRU data files after installing the new firmware image.

FRU ID files included in firmware version 63998-08152:

Shelf P/N	FRU type	FRU ID file name
11596-100	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596100HABIN.bin 21596132ABBIN.bin 21593312ABBIN.bin 21596134AABIN.bin
11596-101	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596101HABIN.bin 21596132ABBIN.bin 21593312ABBIN.bin 21596134AABIN.bin
11596-102	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596102HABIN.bin 21596132ABBIN.bin 21593312ABBIN.bin 21596134AABIN.bin
11596-103	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596103HABIN.bin 21596132ABBIN.bin 21593312ABBIN.bin 21596134AABIN.bin
11596-300 (Chassis Rev AB and higher)	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596300HABIN.bin 21596198AABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11596-300 (Chassis Rev AA)	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596300HA01BIN.bin 21596198AABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11596-301 (Chassis Rev AB and higher)	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596301HABIN.bin 21596198AABIN.bin 21594340BABIN.bin 21594159CABIN.bin

11596-301 (Chassis Rev AA)	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596301HABIN.bin 21596198AABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11596-302	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596302HABIN.bin 21596198AABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11596-303	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596303HABIN.bin 21596198AABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11592-400	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592400HABIN.bin 21593100CABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11592-401	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592401HABIN.bin 21593100CABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11592-402	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592402HABIN.bin 21593100CABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11592-403	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592403HABIN.bin 21593100CABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11592-500	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592500HABIN.bin 21594357ACBIN.bin 21593312ABBIN.bin 21594356ABBIN.bin
11592-501	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592501HABIN.bin 21594357ACBIN.bin 21593312ABBIN.bin 21594356ABBIN.bin
11592-502	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592502HABIN.bin 21594357ACBIN.bin 21593312ABBIN.bin 21594356ABBIN.bin
11592-503	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592503HABIN.bin 21594357ACBIN.bin 21593312ABBIN.bin 21594356ABBIN.bin
11596-027	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596027HABIN.bin 21593100CABIN.bin 21594340BABIN.bin 21594159CABIN.bin
11596-006	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596006HABIN.bin 21593100CABIN.bin 21596033ABBIN.bin 21594159CABIN.bin
11596-025	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	21596025HABIN.bin 21596100CABIN.bin 21596033ABBIN.bin 21594159CABIN.bin
11596-040	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596040HABIN.bin 21593100CABIN.bin 21596033ABBIN.bin n/a
11596-045	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596045HABIN.bin n/a 21596033ABBIN.bin n/a
11596-010	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596010ADBIN.bin n/a n/a 21596077AABIN.bin
11596-012	Shelf FRU file Fan Tray FRU file PEM FRU file	11596012ACBIN.bin n/a n/a

	SAP FRU file	21596077AABIN.bin
11596-007	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11596007HABIN.bin n/a n/a 21596077AABIN.bin
11592-085	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592085BGBIN.bin 21592122BBBIB.bin 21592133BBBIN.bin 23098167CABIN.bin
11592-044	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592044CABIN.bin 21592122BBBIB.bin 21592133BBBIN.bin 23098167CABIN.bin
11592-043	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592043BDBIN.bin 21592122BBBIB.bin 21592133BBBIN.bin 23098167CABIN.bin
11592-042	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592042BCBIN.bin 21592048AABIN.bin 21592047AABIN.bin 23098167CABIN.bin
11592-027	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file	11592027BFBIN.bin 21592048AABIN.bin 21592047AABIN.bin 23098167CABIN.bin
11590-111	Shelf FRU file	11590111BBBIN.bin
SYS000517	Shelf FRU file	SYS000517AABIN.bin
BPL000763	Shelf FRU file	BPL000763AABIN.bin
SYS000764	Shelf FRU file	SYS000764BDBIN.bin
SYS000766	Shelf FRU file	SYS000766BJBIN.bin
SYS000766FT	Shelf FRU file	SYS000766FTACBIN.bin
SYS001916	Shelf FRU file	SYS001916ABBIN.bin
SYS002927	Shelf FRU file	SYS002927AEBIN.bin
BPL003011	Shelf FRU file	BPL003011AABIN.bin
SYS003214	Shelf FRU file	SYS003214AABIN.bin
SYS003862	Shelf FRU file	SYS003862AABIN.bin
SYS004060	Shelf FRU file	SYS004060ABBIN.bin
SYS03214R	Shelf FRU file	SYS03214RACBIN.bin
SYS03761R	Shelf FRU file	SYS03761RAABIN.bin
VEN12ATCA014 Ventus shelf with DSAP '21596-077'	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file (DSAP)	VEN12ATCA014DSAPHABIN.bin n/a n/a 21596077AABIN.bin
VEN12ATCA014 Ventus shelf with ISAP 'ISAP2'	Shelf FRU file Fan Tray FRU file PEM FRU file SAP FRU file (ISAP)	VEN12ATCA014ISAPBABIN.bin n/a n/a n/a
ZR5ATC6TMDPEM2N Zephyr shelf with DSAP '21596-077'	Shelf FRU file SAP FRU file (DSAP)	ZR5ATC6TMDPEM2NDSAPBABIN.bin 21596077AABIN.bin
ZR5ATC6TMDPEM2N Zephyr shelf with ISAP 'ISAP2'	Shelf FRU file with ISAP Fan Tray FRU file PEM FRU file SAP FRU file (ISAP)	ZR5ATC6TMDPEM2NISAPBABIN.bin n/a n/a n/a
Shelf manager FRU files 21596-291 21596-292 21594-346 21594-347 21593-250 21593-251 23098-163	Shelf Manager ACB-V bused Shelf Manager ACB-V radial Shelf Manager ACB-IV bused Shelf Manager ACB-IV radial Shelf Manager ACB-III bused Shelf Manager ACB-III radial Shelf Manager ACB-III bused	21596291HABIN.bin 21596292HABIN.bin 21594346HABIN.bin 21594347HABIN.bin 21593250AABIN.bin 21593251AABIN.bin 23098163AABIN.bin
Various FRUs	Fan Tray FRU file Fan Tray FRU file SAP FRU file	21593190AABIN.bin 21593372AABIN.bin 21594110ABBIN.bin

Note: If the required FRU files are not located in the /var/nvdata directory on the shelf manager they can be downloaded from the <http://www.a-tca.com> WWW site.

3 Upgrading the Shelf Manager to release 2.5.3

There are two ways of upgrading the Shelf Manager firmware. You can use the **TFTP Upgrade Procedure** which is started from the U-Boot environment of the Shelf Manager and retrieves the files from a TFTP server on your network. You can also use the **Reliable Upgrade Procedure**. This procedure will copy the new firmware flash images from a FTP server on your network to RAM on the ShMM-500 and then copy the images to flash memory. We strongly recommend that you use the **Reliable Upgrade Procedure** instead of the **TFTP Upgrade Procedure** because it will leave the shelf manager in operating condition if the firmware upgrade fails.

The firmware upgrade procedure must be executed for **both shelf managers in a redundant system**. Please make sure that both shelf managers are updated to the same firmware revision and configuration.

Below are four examples of the required steps to upgrade your chassis:



The first two examples shown below are for Schroff chassis with managed FRUs. The second two examples are for Schroff chassis with IPMC based FRUs. These procedures work on the factory default chassis configuration when a chassis is shipped from Schroff manufacturing. Before updating deployment chassis in the field we recommend to test the procedure in your laboratory and to adapt the procedure to your specific environment if necessary. For further information regarding the firmware upgrade process please see the Pigeon Point Systems user guide "ShelfManagerUG_2_5_3_20080430.pdf"

Example 1:

Chassis with one shelf manager and serial-connection or SSH-connection to the console interface:

1. Install the firmware → **Chapter 3.1**
2. Install the FRU files → **Chapter 3.3**
3. set the rc2 variable to /etc/rc.acb-HPDL → **Chapter 3.4**
4. reboot the shelf manager → **Chapter 3.5**

Example 2

Chassis with two shelf managers and serial-connection or SSH-connection to the console interface of the active shelf manager in 0x10

1. Programming the firmware and the shelf manager FRU file on the shelf manager in slot 0x10:
 - a. Connect to the active shelf manager in slot 0x10 and install the firmware → **Chapter 3.1**
 - b. Do a "cli switchover" to switch back to 0x10
 - c. Install the shelf manager FRU file on 0x10 → **Chapter 3.3**
 - d. Reboot the shelf manager using the "reboot" command
2. Programming the firmware and the shelf manager FRU file on the shelf manager in slot 0x12:
 - a. Connect to the active shelf manager in slot 0x12 and install the firmware → **Chapter 3.1**
 - b. Do a "cli switchover" to switch back to 0x12
 - c. Install the shelf manager FRU file on 0x12 → **Chapter 3.3**
 - d. Reboot the shelf manager using the "reboot" command
3. Install the FRU files in the chassis and set the correct rc2 variable
 - a. Connect to the shelf manager in slot 0x10 and install the FRU files for the chassis, fan trays, PEMs and SAP → **Chapter 3.3**
 - b. SSH into the backup shelf manager, IP 192.168.1.3 (user=root, no password)
 - c. Set the rc2 variable to /etc/rc.acb-HPDL → **Chapter 3.4**
 - d. Terminate the ssh connection with "exit"
 - e. On the shelf manager in slot 0x10 set the rc2 variable to /etc/rc.acb-HPDL → **Chapter 3.4**
 - f. Reboot both shelf managers simultaneously → **Chapter 3.5**

Example 3:

Zephyr or Ventus chassis with one shelf manager and serial-connection or SSH-connection to the console interface:

1. Set the rc2 variable to /etc/rc.acb4 → **Chapter 3.4**
 2. Install the firmware → **Chapter 3.1**
 3. Install the FRU files in the shelf manager and chassis and DSAP. → **Chapter 3.3**
- Note: Do not install FRU files in the fan trays, ISAP or PEMS!**
4. set the rc2 variable to /etc/rc.acb-HPDL → **Chapter 3.4**
 5. reboot the shelf manager → **Chapter 3.5**

Example 4

Zephyr or Ventus chassis with two shelf managers and serial-connection or SSH-connection to the console interface of the active shelf manager in 0x10

1. Programming the firmware and the shelf manager FRU file on the shelf manager in slot 0x10:
 - a. Set the rc2 variable to /etc/rc.acb4 → **Chapter 3.4**
 - b. Connect to the active shelf manager in slot 0x10 and install the firmware → **Chapter 3.1**
 - c. Do a "cli switchover" to switch back to 0x10
 - d. Install the shelf manager FRU file on 0x10 → **Chapter 3.3**
 - e. Reboot the shelf manager using the "reboot" command
2. Programming the firmware and the shelf manager FRU file on the shelf manager in slot 0x12:
 - a. Set the rc2 variable to /etc/rc.acb4 → **Chapter 3.4**
 - b. Connect to the active shelf manager in slot 0x12 and install the firmware → **Chapter 3.1**
 - c. Do a "cli switchover" to switch back to 0x12
 - d. Install the shelf manager FRU file on 0x12 → **Chapter 3.3**
 - e. Reboot the shelf manager using the "reboot" command
3. Install the FRU files in the chassis and set the correct rc2 variable
 - a. Connect to the shelf manager in slot 0x10 and install the FRU files for the chassis and DSAP
Note: Do not install FRU files in the fan trays, ISAP or PEMS! → **Chapter 3.3**
 - b. SSH into the backup shelf manager, IP 192.168.1.3 (user=root, no password)
 - c. Set the rc2 variable to /etc/rc.acb-HPDL → **Chapter 3.4**
 - d. Terminate the ssh connection with "exit"
 - e. On the shelf manager in slot 0x10 set the rc2 variable to /etc/rc.acb-HPDL → **Chapter 3.4**
 - f. Reboot both shelf managers simultaneously → **Chapter 3.5**

3.1 Reliable Upgrade Procedure

The Reliable Upgrade procedure will copy the new firmware flash images from an FTP server on your network to RAM on the ShMM-500 and then copy the images to flash memory.

STEP 1

Network settings:

In order to retrieve the new firmware images the Shelf Manager needs a network connection to your FTP server. If this already exists through the Base Interface hub then no further network configuration is required. If your Base Interface hubs are not connected to a network, you can use the RJ-45 connector on the front panel of the Shelf Manager to connect to the FTP server on your network.

If you need to use the front panel Ethernet connector you need to set the jumpers on the Shelf Manager to route the primary Ethernet port to the front panel. When the jumpers are on the pins towards the front panel the Ethernet is connected to the front panel connector. See the Shelf User Manual for details of the jumper setting.

You need to configure the IP Address that the Shelf Manager will use on the network to access the FTP server. The command "cli setlanconfig 1 ip 192.168.0.2" will set the IP Address of the **active** Shelf Manager to "192.168.0.2". The active Shelf Manager is the one with the green LED illuminated and not blinking. You need to substitute "192.168.0.2" in the example for your desired IP Address.

If your Shelf Manager is on a different network than your FTP server, then you need to configure the Default Gateway. The command "cli setlanconfig 1 dft_gw_ip 192.168.0.1" will set the IP Address of the Default Gateway to "192.168.0.1". You need to substitute "192.168.0.1" in the example for the IP Address of the Default Gateway on your network.

If you use subnets on your network then you need to change the Subnet Mask from the default value of "255.255.255.0". The command "cli setlanconfig 1 subnet_mask 255.255.255.128" will set Subnet Mask of the Subnet Mask to "255.255.255.128". You need to substitute "255.255.255.128" in the example for the Subnet Mask of your network.

You can use the command "ping 192.168.0.6" to test the network connection to the FTP server. You need to substitute "192.168.0.6" in the command for the IP address of the FTP server on your network. The example below shows a successful ping test.

```
# ping -c 2 192.168.0.6
PING 192.168.0.6 (192.168.0.6): 56 data bytes
64 bytes from 192.168.0.6: icmp_seq=0 ttl=64 time=1.5 ms
64 bytes from 192.168.0.6: icmp_seq=1 ttl=64 time=1.9 ms
--- 192.168.0.6 ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max = 1.5/1.7/1.9 ms
```

Connect a serial console cable to from a terminal or PC running a terminal emulator (Hypercom, Minicom, Hyperterminal etc) to the console port of the Shelf Manager. Set the terminal or emulator to 115200, N 8, 1 (115200 baud, no parity, 8 bits per character, 1 stop bit).

STEP 2

Upgrade Process:

Put the three Reliable Upgrade FLASH images (63998-08152.shmm500.kernel, 63998-08152.shmm500.rfs, 63998-08152.u-boot.bin) on a FTP server that is on the same network as the Shelf Managers.



For this example the Reliable Upgrade FLASH images were put in the /tmp directory on the FTP server. A single command is executed on the **active** Shelf Manager to upgrade the FLASH images. This command will download the FLASH images using FTP, copy them into the alternate FLASH memory, configure the Shelf Manager for a provisional boot, and reboot the Shelf Manager.

If all goes well the reliable upgrade watchdog timer will be reset after Linux boots and the provisional FLASH memory will be configured as the current FLASH memory. If the upgrade fails the original FLASH memory will be configured as the current FLASH memory and the Shelf Manager will reboot.

In the example below "192.168.0.7" is the TCP/IP address of the FTP server. You will need to substitute the TCP/IP address of your FTP server. In the example "/tmp" is the directory on the FTP server that contains the new FLASH images. You will need to substitute the directory name on your FTP server that contains the FLASH images. In the example "ftp" is a valid userid on the FTP server and "ftppw" is the password for the userid. You will need to substitute both "ftp" and "ftppw" for a valid userid and password on your FTP server.

This is an example of the Reliable Upgrade command:

```
rupgrade_tool -s -v --k=63998-08152.shmm500.kernel --r=63998-08152.shmm500.rfs --u=63998-08152.u-boot.bin --proto=ftp:192.168.0.7:/tmp:ftp:ftppw --hook=erase
```

Note: This command is on a single line.

This is an example of the Reliable Upgrade command and the response of the Shelf Manager:

```
# rupgrade_tool -s -v --k=63998-08152.shmm500.kernel --r=63998-08152.shmm500.rfs --u=63998-08152.u-boot.bin --proto=ftp:10.183.7.53:/tmp:ftp:ftp --hook=erase
rupgrade_tool: PLB is 7
rupgrade_tool: EEPROM page saved
rupgrade_tool: persistent flash is 1
rupgrade_tool: provisional flash is 0
rupgrade_tool: copying image(s)
rupgrade_tool: copying 63998-08152.u-boot.bin from 10.183.7.53:/tmp to /tmp using 'ftp' protocol
220-FileZilla Server version 0.9.24 beta
220-written by Tim Kosse (Tim.Kosse@gmx.de)
220 Please visit http://sourceforge.net/projects/filezilla/
USER ftp
331 Password required for ftp
PASS *****
230 Logged on
TYPE I
200 Type set to I
PASV
227 Entering Passive Mode (10,183,7,53,14,123)
RETR /tmp/63998-08152.u-boot.bin
150 Connection accepted
226 Transfer OK
QUIT
221 Goodbye
rupgrade_tool: copying 63998-08152.shmm500.kernel from 10.183.7.53:/tmp to /tmp using 'ftp' protocol
220-FileZilla Server version 0.9.24 beta
220-written by Tim Kosse (Tim.Kosse@gmx.de)
220 Please visit http://sourceforge.net/projects/filezilla/
USER ftp
331 Password required for ftp
PASS *****
230 Logged on
TYPE I
200 Type set to I
PASV
227 Entering Passive Mode (10,183,7,53,14,124)
RETR /tmp/63998-08152.shmm500.kernel
150 Connection accepted
226 Transfer OK
```



```
QUIT
221 Goodbye
rupgrade_tool: copying 63998-08152.shmm500.rfs from 10.183.7.53:/tmp to /tmp using 'ftp' protocol
220-FileZilla Server version 0.9.24 beta
220-written by Tim Kosse (Tim.Kosse@gmx.de)
220 Please visit http://sourceforge.net/projects/filezilla/
USER ftp
331 Password required for ftp
PASS *****
230 Logged on
TYPE I
200 Type set to I
PASV
227 Entering Passive Mode (10,183,7,53,14,125)
RETR /tmp/63998-08152.shmm500.rfs
150 Connection accepted
226 Transfer OK
QUIT
221 Goodbye
rupgrade_tool: invoking scripts (step4v*) [--u=63998-08152.u-boot.bin --k=63998-
08152.shmm500.kernel --r=63998-08152.shmm500.rfs --proto=ftp:10.183.7.53:/tmp:ftp:ftp --
hook=erase]
rupgrade_tool: copying 63998-08152.u-boot.bin from /tmp to /dev/mtdchar8 using 'cp' protocol
rupgrade_tool: copying 63998-08152.shmm500.kernel from /tmp to /dev/mtdchar7 using 'cp' protocol
rupgrade_tool: copying 63998-08152.shmm500.rfs from /tmp to /dev/mtdchar9 using 'cp' protocol
rupgrade_tool: invoking scripts (step4h*) [erase]
/etc/upgrade/step4hshmm: Stopping Shelf Manager...Done
/etc/upgrade/step4hshmm: Cleaning new /var partition...Done
/etc/upgrade/step4hshmm: Cleaning new /etc partition...Done
/etc/upgrade/step4hshmm: Leaving /var and /etc empty except for ssh keys from /etc/ssh...Done
/etc/upgrade/step4hshmm: Upgrade completed.
rupgrade_tool: image(s) copy OK
rupgrade_tool: watchdog started
rupgrade_tool: selected provisional flash
rupgrade_tool: reboot
Restarting system.
```

U-Boot 1.1.4 (Jun 26 2008 - 09:03:58)

```
CPU: Aul550 324 MHz, id: 0x02, rev: 0x00
Board: ShMM-500
S/N: 08004157
DRAM: (Samsung K4S511633F) 128 MB
Flash: 64 MB
In: serial
Out: serial
Err: serial
ADM1060: configuration version 80
Net: AulX00 ETHERNET
Hit any key to stop autoboot: 0
## Booting image at be080000 ...
Image Name: 63998-08152.kernel Linux-2.4.26
Created: 2008-08-05 15:43:24 UTC
Image Type: MIPS Linux Kernel Image (gzip compressed)
Data Size: 852040 Bytes = 832.1 kB
Load Address: 80100000
Entry Point: 802c4040
Verifying Checksum ... OK
Uncompressing Kernel Image ... OK
## Loading Ramdisk Image at be440000 ...
Image Name: 63998-08152.RFS
Created: 2008-08-05 15:43:24 UTC
Image Type: MIPS Linux RAMDisk Image (gzip compressed)
Data Size: 3702831 Bytes = 3.5 MB
Load Address: 00000000
Entry Point: 00000000
Verifying Checksum ... OK

Starting kernel ...

/etc/rc: Mounting filesystems...
```



```
/etc/rc: Mounted /proc
/etc/rc: Mounted /dev/pts
/etc/rc: Mounted /dev/mtdblock10 to /var/upgrade
/etc/rc: Checking the reliable upgrade watchdog timer...activated
/etc/rc: Mounted /dev/mtdblock0 to /var
/etc/rc: Placed /var/tmp to ram disk
/etc/rc: Setting hostname shmm500
/etc/rc: Started syslogd and klogd
/etc/rc: Strobing the reliable upgrade WDT
/etc/rc: /dev/mtdblock1 appears to be empty ... restoring from factory /etc...
/etc/rc: Preserved ssh_host_dsa_key in /etc/ssh
/etc/rc: Preserved ssh_host_rsa_key in /etc/ssh
/etc/rc: Mounted /dev/mtdblock1 to /etc
/etc/rc: Calling /etc/rc.acb-HPDL
/etc/readhwaddr: Board Hardware Address: 0x10
/etc/netconfig: /etc/hosts updated with shmm500 192.168.0.22 entry
/etc/netconfig: Updating /etc/profile.sentry with IP settings
/etc/netconfig: ifconfig eth0 192.168.0.22 netmask 255.255.255.0
/etc/netconfig: ifconfig eth1 192.168.1.2 netmask 255.255.255.0
/etc/netconfig: route add default gw 192.168.0.1
/etc/netconfig: Starting /bin/inetd...
/etc/rc.acb-HPDL: Starting up IPMBs ...
/etc/rc.acb-HPDL: Updating /etc/profile.sentry with specific settings
/etc/rc.acb-HPDL: Starting snmpd...
/etc/rc.acb-HPDL: Starting httpd...
/etc/rc.acb-HPDL: Starting Shelf Manager ... for carrier type ACB
/etc/rc.acb-HPDL: Command line: shelfman -sf
/etc/rc.acb-HPDL: Strobing the reliable upgrade WDT

<*> 00:00:12.315 [239] Pigeon Point Shelf Manager ver. 2.5.3. Built on May 13 2008 15:07:11
<*> 00:00:12.376 [239] *** Lock log print buffer at 10058a90 ***
<*> 00:00:12.378 [239] *** Pthread lock log print buffer at 1005d2e0 ***
<I> 00:00:12.391 [239] Reading configuration file: /etc/shelfman.conf

shmm500 login: root
Password:
```

Step 3

Verification of the upgrade:

After bootup of the system log in as root with empty password.

```
shmm500 login: root
Password:
#
```

To verify the successful upgrade, you can verify the version that you are running with the “version” command:

```
# version

Current Boot
Image Name: 63998-08152.uboot.bin 1.1.4
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux Firmware (uncompressed)
Data Size: 184864 Bytes = 180.53 kB = 0.18 MB
Load Address: 0x9FC00000
Entry Point: 0x00000000

Current Kernel
Image Name: 63998-08152.kernel Linux-2.4.26
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux Kernel Image (gzip compressed)
Data Size: 852040 Bytes = 832.07 kB = 0.81 MB
Load Address: 0x80100000
Entry Point: 0x802C4040
```



Current RFS
Image Name: 63998-08152.RFS
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux RAMDisk Image (gzip compressed)
Data Size: 3702831 Bytes = 3616.05 kB = 3.53 MB
Load Address: 0x00000000
Entry Point: 0x00000000

Alternate Boot
Image Name: 63998-08152.uboot.bin 1.1.4
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux Firmware (uncompressed)
Data Size: 184864 Bytes = 180.53 kB = 0.18 MB
Load Address: 0x9FC00000
Entry Point: 0x00000000

Alternate Kernel
Image Name: 63998-08152.kernel Linux-2.4.26
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux Kernel Image (gzip compressed)
Data Size: 852040 Bytes = 832.07 kB = 0.81 MB
Load Address: 0x80100000
Entry Point: 0x802C4040

Alternate RFS
Image Name: 63998-08152.RFS
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux RAMDisk Image (gzip compressed)
Data Size: 3702831 Bytes = 3616.05 kB = 3.53 MB
Load Address: 0x00000000
Entry Point: 0x00000000

Pigeon Point Shelf Manager Command Line Interpreter

Pigeon Point Shelf Manager ver. 2.5.3
Pigeon Point is a trademark of Pigeon Point Systems.
Copyright (c) 2002-2008 Pigeon Point Systems
All rights reserved
Build date/time: May 13 2008 15:07:11
Carrier: HPDL/ACB
Carrier subtype: 0; subversion: 0
#

In case the new firmware version appears in the 'alternate' section, and the old version in the 'current' section, the watchdog timer has expired and reset the firmware version to the version before the upgrade. You can use the command 'rupgrade_tool -u' to flip the firmware version the shelf manager will boot up.

For the necessary FRU-File update and additional settings, please proceed to the chapter '**Updating FRU data files**'.

3.2 TFTP Upgrade Procedure

An overview of the procedure is as follows:

** Download the 63998-08152.rfs and 63998-08152.kernel images and place them on your network reachable TFTP server. The 63998-08152.rfs image includes the u-boot.bin, sentry.shmm500.kernel and sentry.shmm500.rfs images *inside* this special boot image.

** TFTP boot the upgrade kernel and RFS images on your ShMM-500. Once booted, the upgrade script will automatically update your ShMM-500 using the rupgrade_tool utility and the new 2.5.3 kernel and RFS and u-boot images stored in the upgrade RFS image. It will then reboot.

** For customers with early production F64M128 (large capacity ShMM-500+ modules) an additional step may be performed to reprogram the ADM1060 to enable the larger flash memory.

Step 1

Rename the kernel and RFS files:

- Rename 63998-08152.kernel to sentry.kernel
- Rename 63998-08152.rfs to sentry.rfs

These images need to be placed on a TFTP server machine that is network reachable from the ShMM-500 module.

Step 2

Power on your ShMM-500 based hardware and interrupt the boot-up process by pressing the space-bar on the serial port console of the ShMM-500:

```
U-Boot 1.1.4...
```

```
...
```

```
Shmm500
```

Step 3

Verify the correct name of the download images.

Make sure that the renamed files of Step 1 correspond to the required file names in u-boot.

```
Shmm500 printenv
```

```
...
```

```
bootfile=sentry.kernel
```

```
ramdisk=sentry.rfs
```

```
.....
```

Step 4

Make sure that the network settings for your ShMM-500 are such that it can see the TFTP server on your network:

```
shmm500 printenv serverip ipaddr netmask gatewayip
```

```
serverip=192.168.0.7
```

```
ipaddr=192.168.0.2
```

```
netmask=255.255.0.0
```

```
gatewayip=192.168.0.1
```

If any of these need to be changed, do it as follows:

```
shmm500 setenv serverip 192.168.0.88
```

```
shmm500 saveenv
```

```
Saving Environment to EEPROM...
```

```
shmm500
```




IMPORTANT: As part of the upgrade process, the ENV VAR settings will be restored to factory default. Please make sure to take note on the ENV VAR settings so they can be restored at the end of the upgrade. To display the current settings, type:

```
shmm500 printenv
```

The default settings are listed in the chapter 'Configuration Settings'.

Step 5

If your ShMM-500 module has the net command defined, you can use this command to boot the upgrade kernel and RFS as follows:

```
shmm500 run net
```

If it does not, you can set the system variables step-by-step and start the upgrade process:

```
setenv bootargs $(bootargs) root=/dev/ram rw console=ttyS0,115200 <enter>
setenv reliable_upgrade=y <enter>
tftp 80400000 sentry.kernel <enter>
tftp 81200000 sentry.rfs <enter>
bootm 80400000 81200000 <enter>
```

The upgrade kernel and RFS will boot and automatically start the upgrade process.

This procedure may take several minutes.

The ShMM will reboot automatically after the upgrade is complete.

Step 6

Verification of the upgrade:

After bootup of the system log in as root with empty password.

```
shmm500 login: root
Password:
#
```

To verify the successful upgrade, you can verify the version that you are running with the "version" command:

```
# version
```

Current Boot

```
Image Name: 63998-08152.uboot.bin 1.1.4
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux Firmware (uncompressed)
Data Size: 184864 Bytes = 180.53 kB = 0.18 MB
Load Address: 0x9FC00000
Entry Point: 0x00000000
```

Current Kernel

```
Image Name: 63998-08152.kernel Linux-2.4.26
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux Kernel Image (gzip compressed)
Data Size: 852040 Bytes = 832.07 kB = 0.81 MB
Load Address: 0x80100000
Entry Point: 0x802C4040
```

Current RFS

```
Image Name: 63998-08152.RFS
Created: Tue Aug 5 15:43:24 2008
```



Image Type: MIPS Linux RAMDisk Image (gzip compressed)
Data Size: 3702831 Bytes = 3616.05 kB = 3.53 MB
Load Address: 0x00000000
Entry Point: 0x00000000

Alternate Boot

Image Name: 63998-08152.uboot.bin 1.1.4
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux Firmware (uncompressed)
Data Size: 184864 Bytes = 180.53 kB = 0.18 MB
Load Address: 0x9FC00000
Entry Point: 0x00000000

Alternate Kernel

Image Name: 63998-08152.kernel Linux-2.4.26
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux Kernel Image (gzip compressed)
Data Size: 852040 Bytes = 832.07 kB = 0.81 MB
Load Address: 0x80100000
Entry Point: 0x802C4040

Alternate RFS

Image Name: 63998-08152.RFS
Created: Tue Aug 5 15:43:24 2008
Image Type: MIPS Linux RAMDisk Image (gzip compressed)
Data Size: 3702831 Bytes = 3616.05 kB = 3.53 MB
Load Address: 0x00000000
Entry Point: 0x00000000

Pigeon Point Shelf Manager Command Line Interpreter

Pigeon Point Shelf Manager ver. 2.5.3
Pigeon Point is a trademark of Pigeon Point Systems.
Copyright (c) 2002-2008 Pigeon Point Systems
All rights reserved
Build date/time: May 13 2008 15:07:11
Carrier: HPDL/ACB
Carrier subtype: 0; subversion: 0
#

In case the new firmware version appears in the 'alternate' section, and the old version in the 'current' section, the watchdog timer has expired and reset the firmware version to the version before the upgrade. You can try the command 'rupgrade_tool -u' to flip the firmware version the shelf manager will boot up.

For the necessary FRU-File update and additional settings, please proceed to the chapter '**Updating FRU data files**'.

3.3 Updating FRU data files



Do not use the CLI command “clia frudataw” to update the FRU ID files. Instead, use the script /var/nvdata/fru_update to update FRU ID files. This script saves chassis specific data like serial numbers and manufacturing date. A complete list of saved data is listed in table below

Saved variables

Variable Name	Area	Info
Serial number	[Board Info Area]	
Serial number	[Chassis Info Area]	
Serial number	[Product Info Area]	
Mfg. Date/Time	[Board Info Area]	
Product Version	[Product Info Area]	
Asset Tag	[Product Info Area]	
IP address	OEM record [Shelf Manager IP Connection]	
Gateway	OEM record [Shelf Manager IP Connection]	
Netmask	OEM record [Shelf Manager IP Connection]	
	Internal Use Area	Complete

FRU ID file update:

Syntax:

sh /<path>/fru_update <IPMC> <FRU ID> <path>/<filename>

<path>: Location of the FRU files, default: /var/nvdata

<filename>: Name of the FRU file.

Example: 11596401HABIN.bin

11596401: Chassis or FRU part number

HA: Revision of the FRU data file

BIN: Identification for a FRU data file

.bin Format of FRU data file

The table below lists valid values for <IPMC> and <FRU ID> for a 14 or 16 slot Schroff chassis with managed FRUs. In order to get a list of supported FRU numbers and associated FRU types for your specific chassis type use the commands “clia fru”

<IPMC>	<FRU ID>	Description
10	0	Shelf Manager in slot 0x10
12	0	Shelf Manager in slot 0x12
20	1	Shelf SEEPROM 1
20	2	Shelf SEEPROM 2
20	3	Fan Tray 0
20	4	Fan Tray 1
20	5	Fan Tray 2
20	6	PEM 0
20	7	PEM 1
20	8	SAP

The table below lists valid values for <IPMC> and <FRU ID> for a 6, 14 or 16 slot Schroff chassis with IPMC based FRUs. In order to get a list of supported FRU numbers and associated FRU types for your specific chassis type use the commands “clia fru”

<IPMC>	<FRU ID>	Description
10	0	Shelf Manager in slot 0x10
12	0	Shelf Manager in slot 0x12
20	1	Shelf SEEPROM 1
20	2	Shelf SEEPROM 2
20	3	SAP

Examples:

```
sh /var/nvdata/fru_update 20 1 /var/nvdata/11596101HABIN.bin
Writes Chassis FRU-data of the chassis with part number 11596-101 into FRU_data SEEPROM 1 and restores the variables listed in Table 1.
```

```
sh /var/nvdata/fru_update 20 3 /var/nvdata/21596132ABBIN.bin
Writes Fan Tray FRU-data into the FRU_data SEEPROM of the left Fan Tray (Fan Tray 0) and restores the variables listed in Table 1.
```

Complete update:

The example below shows the complete update of the FRU files in the shelf and on the shelf managers in a 14 or 16 slot Schroff ATCA chassis. In order to get a list of supported FRU numbers and associated FRU types for your specific chassis type use the command “clia fru”

Change to the /var/nvdata/directory
cd /var/nvdata

Chassis FRU file update:

Download of FRU data to shelf SEEPROM 1:

```
# sh fru_update 20 1 <Chassis FRU file name>
```

Download of FRU data to shelf SEEPROM 2:

```
# sh fru_update 20 2 <Chassis FRU file name>
```

Download of FRU data to Fan Tray 0:

```
# sh fru_update 20 3 <Fan Tray FRU file name>
```

Download of FRU data to Fan Tray 1:

```
# sh fru_update 20 4 <Fan Tray FRU file name>
```

Download of FRU data to Fan Tray 2:

```
# sh fru_update 20 5 <Fan Tray FRU file name>
```

Download of FRU data to PEM A:

```
# sh fru_update 20 6 <PEM FRU file name>
```

Download of FRU data to PEM B:

```
# sh fru_update 20 7 <PEM FRU file name>
```

Download of FRU data to the SAP:

```
# sh fru_update 20 8 <SAP FRU file name>
```

Shelf Manager FRU file update:

In a system with only one Shelf Manager, please consult the user manual of the shelf to determine the shelf manager address locations 10 and 12.

Download of FRU data to the Shelf Manager in 0x10:

```
# sh fru_update 10 0 <Shelf Manager FRU file name>
```

Download of FRU data to the Shelf Manager in 0x12:

```
# sh fru_update 12 0 <Shelf Manager FRU file name>
```

Note: The upgrade process of the shelf manager may take several minutes.

3.4 Setting the environmental variable rc2

After successful upgrade, set the RC2 environment variable and reboot the system.

```
# setenv rc2 /etc/rc.acb-HPDL
```



Please make sure that the rc2 variable is set correctly. A common problem that causes the Shelf Manager to not work properly is to set the rc2 variable incorrectly. You must set the rc2 variable on both shelf managers to the same value, e.g. /etc/rc.acb-HPDL. You can check the setting with 'getenv rc2'. After setting the variable, reboot the shelf manager. If one of the shelf managers is set to a different variable, it will constantly reboot, signaling that it is not working properly.

3.5 Restart the system

If you use redundant shelf managers you need to reboot both shelf managers at the same time.

There are several ways of doing this:

- 1) Power cycle the complete chassis.
- 2) Remove both shelf managers from their slots. Wait minimum 5 sec. Re-insert the shelf managers.
- 3) Push the reset-buttons on the front panel of both shelf managers (use a ball-pen tip or similar) **within a maximum delay of 3 sec.**
- 4) Use the script `fru_data_refresh` in `/var/nvdata`:

```
cd /var/nvdata
sh fru_data_refresh
```

4 Special tests for HPDL upgrade:

With the new HPDL scheme, some tests should be done after the upgrade to verify the correct installation of the firmware and the FRU files.

These tests should be done on both shelf managers in a redundant system.

1) Correct version installed and configured:

use the `version` command to check for the correct firmware version numbers under 'current boot', 'current kernel' and 'current rfs'.

All should be **63998-08152**.

The Pigeon Point Shelf manager version should be **2.5.3**.

The carrier setting should be **HPDL/ACB**.

```
# version
```

Current Boot

```
Image Name: 63998-08152.uboot.bin 1.1.4
Created: Mon Jul 21 14:17:26 2008
Image Type: MIPS Linux Firmware (uncompressed)
Data Size: 184864 Bytes = 180.53 kB = 0.18 MB
Load Address: 0x9FC00000
Entry Point: 0x00000000
```

Current Kernel

```
Image Name: 63998-08152.kernel Linux-2.4.26
Created: Mon Jul 21 14:17:26 2008
Image Type: MIPS Linux Kernel Image (gzip compressed)
Data Size: 852040 Bytes = 832.07 kB = 0.81 MB
Load Address: 0x80100000
Entry Point: 0x802C4040
```

Current RFS

```
Image Name: 63998-08152.RFS
Created: Mon Jul 21 14:17:25 2008
Image Type: MIPS Linux RAMDisk Image (gzip compressed)
Data Size: 3702798 Bytes = 3616.01 kB = 3.53 MB
Load Address: 0x00000000
Entry Point: 0x00000000
```

[Alternate section] (not printed)

Pigeon Point Shelf Manager Command Line Interpreter

```
Pigeon Point Shelf Manager ver. 2.5.3
Pigeon Point is a trademark of Pigeon Point Systems.
Copyright (c) 2002-2008 Pigeon Point Systems
All rights reserved
Build date/time: May 13 2008 15:07:11
Carrier: HPDL/ACB
Carrier subtype: 0; subversion: 0
#
```

2) Correct RC2 file

```
# cat /var/log/messages | grep "Calling /etc/rc.acb-HPDL"
Jan 1 00:00:00 shmm500 user.info /etc/rc: Calling /etc/rc.acb-HPDL
```




Check with the appropriate setting for your shelf manager from the table "Schroff shelf manager versions" at the top of this document.

3) Correct HPDL data in carrier FRU

```
cat /var/log/messages | grep "HPDL data in the FRU"
Jan  1 02:00:05 shmm500 daemon.info shelfman[211]: HPDL data in the FRU 1142 bytes
#
```

4) Correct SDR data in carrier FRU

```
# cat /var/log/messages | grep "HPDL SDRs in the FRU"
Jan  1 02:00:05 shmm500 daemon.info shelfman[211]: HPDL SDRs in the FRU 330 bytes
```

5) Correct HPDL data in shelf FRU

```
# cat /var/log/messages | grep "HPDL Chassis data in the Shelf FRU"
Jan  1 00:00:11 shmm500 daemon.info shelfman[234]: HPDL Chassis data in the Shelf FRU 1997 bytes
```

6) Correct SDR data in shelf FRU

```
# cat /var/log/messages | grep "HPDL Chassis SDRs in the Shelf FRU"
Jan  1 00:00:11 shmm500 daemon.info shelfman[234]: HPDL Chassis SDRs in the Shelf FRU 799 bytes
```

In case of errors or different output from the commands above, please check the following:

- The correct FRU files have been installed.
- The correct shelf manager type is set in the RC2 variable

5 Firmware part number 63998-08152 configuration files

The configuration file `/etc/shelfman.conf` contains all PPS default configuration variables for the Shelf Manager. Variables that have been modified for Firmware version 63998-08152 are stored in the additional configuration files `/etc/shelfman.conf.ACB-HPDL`.
The content of the custom specific configuration file is listed below.

```
# /etc/shelfman.conf.ACB-HPDL
# Created by MGT 4 February 2008

COOLING_MANAGEMENT = acb # Schroff cooling algorithm
#CARRIER_OPTIONS="NEBS:TACH_MASK=0x0F" Enables NEBS cooling strategy
# Uses fan tach mask byte, default is 0xFF
#CARRIER_OPTIONS="CARRIER_FRU_LOCATION=ADM1026:0:0x2e,2080;USE_TELCO=1"
#CARRIER_OPTIONS="IN_EX_SWITCHOFF=0; FRU_IN_ADM1026=1;"
#CARRIER_OPTIONS="CARRIER_FRU_LOCATION=ADM1026:0:0x2e,2110;IN_EX_SWITCHOFF=0"
CARRIER_OPTIONS = "CARRIER_FRU_LOCATION=ADM1026:0:0x2e,2200; MAX_INTAKE=2;
MAX_EXHAUST=2; USE_TELCO=1;"
COOLING_FAN_INCREASE_TIMEOUT = 60
COOLING_FAN_DECREASE_TIMEOUT = 60
FAN_LEVEL_STEP_UP = 2
FAN_LEVEL_STEP_DOWN = 1
NORMAL_STABLE_TIME = 1800
INITIAL_FAN_LEVEL = 8
MIN_FAN_LEVEL = 3
FAN_FULL_SPEED_DELAY=30
IPMB_LINK_ISOLATION_TIMEOUT = 60
REDUNDANCY_NET_ADAPTER = "usb0"
REDUNDANCY_NET_ADAPTER2 = "usb1"
REDUNDANCY_ENABLED = TRUE
USE_SECOND_CHANNEL = TRUE
RMCP_NET_ADAPTER2 = "eth1"
SWITCHOVER_ON_HANDLE_OPEN = TRUE
SWITCHOVER_TIMEOUT_ON_BROKEN_LINK = -1
ALLOW_CLEARING_CRITICAL_ALARM = TRUE
#VERBOSITY = 0xF
HPDL = $HPDL
```

The u-boot configuration data 'environment variables' is stored in a system EEPROM.
The default content is listed below:

```
# getenv
bootdelay=3
baudrate=115200
ipaddr=192.168.0.22
serverip=192.168.0.7
netmask=255.255.255.0
bootfile=sentry.kernel
ramdisk=sentry.rfs
rootpath=/rootfs
ramargs=setenv bootargs root=/dev/ram rw
net=tftpboot 80400000 $(bootfile); tftpboot 81200000 $(ramdisk); run ramargs addmisc;
bootm 80400000 81200000
nfsargs=setenv bootargs root=/dev/nfs rw nfsroot=$(serverip):$(rootpath)
addip=setenv bootargs $(bootargs)
ip=$(ipaddr):$(serverip):$(gatewayip):$(netmask):$(hostname):$(ipdevice)
```

```
addmisc=setenv bootargs $(bootargs) $(quiet) console=$(console),$(baudrate)
reliable_upgrade=$(reliable_upgrade)
nfs=tftpboot 80800000 $(bootfile); run nfsargs addip addmisc; bootm
bootcmd=run ramargs addmisc; bootm $(kernel_start) $(rfs_start)
console=ttyS0
quiet=quiet
ipdevice=eth0
ipldevice=eth1
ipladdr=192.168.1.2
gatewayip=192.168.0.1
rmcpaddr=192.168.0.2
hostname=shmm500
flash_reset=n
password_reset=n
logging=ram
timezone=UTC
rc_ifconfig=y
start_rc2_daemons=y
reliable_upgrade=y
rc2=/etc/rc.acb-HPDL
stdin=serial
stdout=serial
stderr=serial
ethaddr=00:50:c2:4a:16:12
ethladdr=00:50:c2:4a:16:13
serial#=08005704
kernel_start=0xbfb00000
rfs_start=0xbfc40000
ethact=AulX00 ETHERNET
Environment size: 1171/3067 bytes
```

6 Revision History

2.5.3

New and changed features:

1. Added support in u-boot for the new ShMM-500R-4A.
U-boot now supports the end-of-life ShMM-500R-3D with the Samsung SDRAM device and the new ShMM-500R4A with the ISSI SDRAM device.
2. In u-boot changed variable `rc_ifconfig` from "n" to "y". This allows the `/etc/rc` script to set the shelf manager's IP address before the shelfman application sets the RMCP address. This can be useful for debugging if the shelfman applications does not run correctly.
3. The initial support in release 2.5.2 for using ShMM GPIO E8 for controlling the I^2C multiplexer on the ShMM carrier has been enhanced to allow the user to specify the multiplexer I^2C address (parameter **ISOLATE_MUX_ADDRESS**) and a parameter of the isolation algorithm (**ISOLATE_MUX_IGNORE_COUNT**).
4. The **ALLOW_CLEARING_CRITICAL_ALARM** in the `/etc/shelfman.conf.*` files was changed to TRUE. With this setting the "clia alarm clear" command will clear the critical telco alarm.
5. This release includes an update of Monterey Linux that incorporates the following changes:
 - Diagnostic outputs from U-Boot for serious hardware failures during the bootstrap process were improved.
 - A bug in the **inetd** function within **busybox** that caused problems with multiple **telnet** sessions was fixed. When any **telnet** session was closed, **busybox** also closed the last established session.
 - [ShMM-500R] The master-only I^2C drivers were enhanced to better handle hardware bus failures and allow the Shelf Manager application to isolate these failures.

Bug Fixes

Several bugs have been fixed in this release of the Shelf Manager; they include:

1. The command **clia amcportstate** did not work properly for AMCs with site numbers larger than 8. Such site numbers can occur in MicroTCA shelves.
2. An intensely active RMCP session could be broken by a Shelf Manager switchover.
3. The Telco Alarm Input sensor type name (a new sensor for PICMG 3.0 R3.0) was displayed as "OEM reserved" in CLI output.
4. The Shelf Manager could fail to correctly recognize a new board when it was inserted after a switchover if, during that switchover, the corresponding slot held a board in the "communication lost" (M7) state.
5. Redundancy was not working properly for the BMC watchdog facility in the Shelf Manager.
6. The timer mask in the BMC Watchdog sensor was not cleared when the "clear" request was made in a "Set Watchdog Timer" command.
7. An incorrect error message about invalid parameters was displayed by the Shelf Manager in the case of a missing Board Point-to-Point Connectivity Record in Board FRU Information.

8. In the input form for the Shelf command in the Web interface, the input parameter "Hardware Address" was incorrectly named "IPMB Address".
9. SEL notification registrations were incorrectly propagated over the software redundancy interface when more than one registration was in effect.
10. When obtaining Shelf Manager IP addresses via DHCP, the DHCP request IDs were incorrectly created from binary Shelf Addresses; also, for any Shelf Address, an extra 0 byte was incorrectly placed into the DHCP request ID.
11. In the CLI output for the AMC clock configuration record, Max and Min frequencies were exchanged and therefore incorrect.
12. The HPDL driver for PCF8574 could work incorrectly in some cases.

2.5.2:

Firmware version 2.5.2 has not been released as a Schroff version. For details please see Pigeon Point Systems release notes "ShelfManagerREL_2_5_2_20080303.pdf"

2.5.1:

New and changed features:

1. Enabled FRU data storage on the ACB-IV shelf managers.
2. Enabled ALLOW_CLEARING_CRITICAL_ALARM in the shelfman.conf.* files so that the Critical Alarm condition can be cleared with the shelf manager console command "clia alarm clear".

Known Issues for the Zephyr and Ventus Chassis:

1. The DSAP alarm board will not be exposed as a FRU.
Implication: DSAP functionality will not be operational
Workaround: There are no workarounds for this version
2. The ISAP Telco Alarms can be set but NOT cleared by the shelf manager using a (clia alarm ____) command.
Implication: The ISAP will not respond to commands to clear or remove Alarm LEDs.
Workaround: There are no workarounds for this version
3. Missing Fan Presence sensors
Implication: Fan Tray insertion or de-insertion will not create an event on the Shelf Manager.
Workaround: Monitor an alternate event such as the Hot Swap Sensor.
4. Limited ACB-IV Sensors Recognized
Implication: Voltage and Fuse sensors are not part of the SDR records and will not be operational.
Workaround: There are no workarounds for this version

Bug fixes

1. The Shelf Manager could reboot due to watchdog expiration if "clia" utility was suspended while producing the output (e.g. in commands like **clia sensordata | more**).

2. In rare circumstances, the Shelf Manager could fail (and reboot) during initial startup when an attempt was made to access Shelf FRU Info before the Shelf FRU Info subsystem in the Shelf Manager was initialized.

2.5.0:

New and changed features:

1. Updated release of Monterey Linux. This release is based on an update of Monterey Linux that has the following new features:
 - ShMM-500R: The USB device driver has been fixed to properly handle errors that may occur during direct memory access operations. Without this fix, the USB connection between active and backup Shelf Managers might break unexpectedly and be restored only by a backup Shelf Manager reboot.
 - ShMM-500R: The utility **wtmp** has been removed from busybox because it can cause unbounded growth of the login log in RAM.
 - ShMM-500R: The busybox **syslogd** function was changed to respect the timezone (**\$TZ**) variable. Without this fix, the busybox **getty** and **login** functions would report only UTC time in the syslog.
 - ShMM-500R: The following utilities have been added to the RFS image: **patch_fru_info**, **fru_internal**, **i2c_test**, and **gpiomips**.
 - ShMM-500R: An update of the Pigeon Point SNMP MIB (**PPS-SENTRY-MIB.txt**) has added SNMP access to several aspects of the overall Shelf Manager state, specifically the RMCP Up, Shelf FRU Found and Active State indicators that also appear in the output of **cli shmstatus -v**. Also, descriptions of some variables that had been missing previously were added to the MIB file.
2. Support for AMC carriers and AMCs is now enhanced in the Command Line Interface (CLI). Most CLI commands now accept the syntax **amc <N>** where a FRU Device ID is expected, and translate the AMC number to its corresponding FRU Device ID. Also, the syntax **pem <N>** is now supported to designate PEMs.
3. Support for the Pigeon Point Hardware Platform Definition Language (HPDL) has been added. HPDL is a Pigeon-Point-defined language for describing ShMM carrier-specific aspects of the Shelf Manager, and is intended to allow the Shelf Manager to support new ShMM carriers (and their corresponding shelf types) without modifying the Shelf Manager source code. The HPDL support in the 2.5.0 release is preliminary. This feature is expected to be finalized in an upcoming 2.5.x update.
4. A switchover on deactivation of the physical active Shelf Manager is now supported. Now, if the configuration parameter **SWITCHOVER_ON_HANDLE_OPEN** is set, a programmatic deactivation of the physical Shelf Manager also initiates a switchover to the backup Shelf Manager. To allow this, physical Shelf Managers are now not affected by global power down and power cycle operations (such as those initiated due to a thermal critical alert or via the IPMI command "Chassis Control").
5. The Shelf Manager now does not consider that an IPM controller has been replaced, and preserves the identification of that IPM controller, if only the Firmware Revision and/or Auxiliary Firmware Revision fields are changed in the "Get Device ID" response for the IPM controller. This allows the Shelf Manager to better distinguish firmware upgrades of an IPM controller from the removal and reinsertion of a different IPM controller.
6. The major Shelf Manager interface facilities (specifically, the CLI and the RMCP interface) are now monitored for deadlocks by the watchdog timer. A deadlock that makes either of those Shelf Manager interfaces unresponsive now causes the hardware watchdog timer to trigger and reset the Shelf Manager; the backup Shelf Manager takes over. In that case, a dump of the current state of the Shelf Manager's internal locks is written to the file

`/var/nvdata/dumplog.bin` on the Flash file system. This file can be later analyzed for clues about the cause of the failure with the `dumplog` utility via the option `-f`.

7. Forced switchovers from the backup Shelf Manager to handle the case of a frozen active ShMM (CLI command `switchover -force`) are now supported. No negotiations between the Shelf Managers happen in this case; the backup Shelf Manager immediately takes control in hardware.
8. Support for retrieving and setting fan levels in the SNMP interface has been added.
9. When responding to the IPMI command "Send Message", the sequence number in the bridged response is now taken from the encapsulated command. Previously it was taken from the Send Message wrapper command. This change is considered to be more in line with the IPMI specification; the old behavior can be restored by setting to FALSE the following configuration parameter: `INNER_SEQUENCE_NUMBER_IN_SEND_MSG_RESPONSE`.
10. The window size of RMCP sequence numbers is now configurable (via the configuration parameter `SESSION_SEQUENCE_WINDOW`), with default being 128, instead of a fixed size of 8. This improves Shelf Manager resiliency against losses of packets in the network.
11. Support for on-ShMM event handling via PEF has been added. When an event takes place, a designated local executable or script running on the ShMM is invoked and passed the fields of the event message as parameters.
12. The SNMP MIB file `PPS_SENTRY-MIB` is now stored on the ShMM in the directory `/etc/snmp` and is available via the Shelf Manager's Web interface.
13. Support has been added for software emulation of the "ShMC site-dependent" cross-connect type on shelves with the "ShMC site-independent" cross-connect type and vice versa. (Please see the ShMC cross-connects specification, PICMG ECN 3.0-2.0-001, for details on these two types of cross-connects.)
14. Customer specific:
 - a. Fixed fan tachometer mapping for 1slot chassis
 - b. Implemented request for FT and PEM green LED behavior: GREEN LED is OFF when RED is ON.
 - c. Disabled automatic telco alarm.
15. Support added for chassis without fan trays

Bug fixes

1. The LED state on local FRUs the Shelf Manager was sometimes shown incorrectly after switchover.
2. When extracting the active Shelf Manager, an M1->M0 Hot Swap event was not always logged for it.
3. SDRs for the local FRUs in state M0 were incorrectly present in the Shelf Manager Device SDRs.
4. When an IPM controller came out of the Communication Lost state, the old Hot Swap sensor number was used in the simulated M7->M2 Hot Swap event.
5. If the active Shelf Manager crashed at a particular time during the initial startup, the backup Shelf Manager could hang, waiting for a response on the redundancy connection from the active.
6. The Lamp Test could last longer than expected for LEDs managed by a physical IPM controller of the Shelf Manager.
7. The `clia fru -v` command could display the "Current Power Allocation" parameter incorrectly in some cases (with the fractional part of the allocation amount truncated).
8. The `clia fru` command didn't show a FRU in M1 state in some cases.

9. The Shelf Manager didn't check the **MAX_SESSIONS** configuration parameter for exceeding the architectural limit.
10. An incorrect error message was shown in the command **clia frucontrol** in some cases.
11. Setting of the SNMP variables **sensor-negative-threshold-hysteresis** and **sensor-positive-threshold-hysteresis** was done incorrectly.
12. The command **clia setfanlevel** all could cause a fault in the **clia** utility in the case of incorrect parameters.
13. The redundancy of the state of the LEDs on local FRUs represented by the Shelf Manager was not properly supported; that could cause the command "Get FRU LED" State to report incorrect results after a switchover.
14. The common handlers for the "Get Fan Speed Properties", "Get Fan Level", and "Set Fan Level" commands, when targeting an ADM1026-managed fan tray that is represented by the Shelf Manager, have been changed to confirm that the target fan tray is present before they take the requested action.
15. Control-C could not be used to kill the Shelf Manager application when it was invoked synchronously.

For previous releases, please see the Pigeon Point firmware release notes.